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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,351	08/20/2003	Jonathan A. Nagel	9005/6	8595
27774	7590	07/02/2004		
MAYER, FORTKORT & WILLIAMS, PC 251 NORTH AVENUE WEST 2ND FLOOR WESTFIELD, NJ 07090			EXAMINER HUGHES, DEANDRA M	
			ART UNIT 3663	PAPER NUMBER

DATE MAILED: 07/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/646,351

Applicant(s)

NAGEL ET AL.

Examiner

Deandra M Hughes

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WD

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/20/2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimojoh (US 6,606,188 filed Sep. 27, 2001).

With regard to claim 1, Shimojoh disclose:

- at least four optical amplifiers (fig. 2: 5_{1U}, 5_{2U}, 5_{1D}, 5_{2D}) each supplying optical amplification to an optical signal traveling in a different unidirectional (U=upstream; D=downstream) optical fiber that collectively form at least two-bi-directional pairs of optical fibers (S_{1U} and S_{2U} are one pair; S_{1D} and S_{2D} are a second pair)
- a first plurality of pump sources (1₁, 1₃) for providing pump energy to a first optical fiber (S_{1U}) located in a first of the optical fiber pairs and a second optical fiber (S_{2U}) located in a second of the optical fiber pairs, said first optical fiber and said second optical fiber supporting optical signals traveling in a common direction (UPSTREAM);

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- a first combiner (2₃) arrangement combining the pump energy from the first plurality of pump sources and distributing it to the optical amplifiers supplying amplification to optical signals traveling in the first and the second optical fibers
- a second plurality of pump sources (1₂, 1₄) for providing pump energy to a third optical fiber (S_{1D}) located in said first optical fiber pair and a fourth optical fiber located in said second optical fiber pair, said third optical fiber and said fourth optical fiber (S_{2D}) supporting optical signals traveling in a common direction that is opposite to that of said first and second optical fibers (DOWNSTREAM); and
- a second combiner (2₄) arrangement combining the pump energy from the second plurality of pump sources and distributing it to the optical amplifiers supplying amplification to optical signals traveling in the third and the fourth optical fibers.

With regard to claim 2, fig. 7, #10 discloses a pump controller.

With regard to claim 3, the pump controller controls upstream pumping (fig. 7, #10).

With regard to claims 4-5, the amplifiers of fig. 2, 6_{1U}, 6_{1D}, 6_{2U}, and 6_{2D} are EDFAs.

With regard to claims 6-7, there are plurality of combiners (2₁, 2₂, 2₃, 2₄).

With regard to claim 8, the combiners (2₁, 2₂, 2₃, 2₄) are 2x2 combiners.

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Conclusion

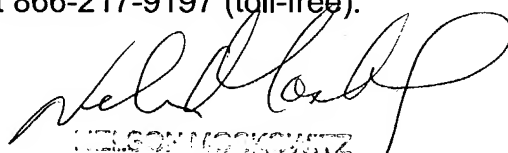
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Rocca discloses a bi-directional optical repeater system.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deandra M Hughes whose telephone number is 703-306-4175. The examiner can normally be reached on M-F, 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H Tarcza can be reached on 703-306-4171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DMH


NELSON MOSKOWITZ
PRINCIPAL EXAMINER